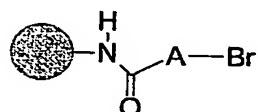


CLAIMS.

5 1. A method for preparing a supported catalyst component for the production of hollow beads of polyethylene of controlled size and morphology that comprises the step of:

- a) providing a porous functionalised bead of polystyrene II



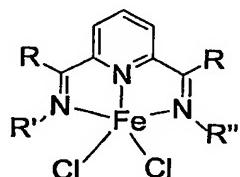
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(II)

wherein A is a flexible arm and is a substituted or unsubstituted alkyl group having from 2 to 18 carbon atoms;

- b) dissolving the iron-based complex of formula I in a solvent;

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(I)

20 wherein R is the same and is an alkyl having from 1 to 20 carbon atoms and wherein R' and R'' are the same or different and are a substituted or unsubstituted alkyl having from 1 to 20 carbon atoms, or a unsubstituted or substituted aryl having substituents from 1 to 20 carbon atoms;

- c) saturating the bead of step a) with the solution of step b);
d) evaporating the solvent;

e) retrieving dry beads of the supported catalyst component.

2. The method of claim 1 wherein the R are the same and are alkyl groups having from 1 to 4 carbon atoms.

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3. The method of any one of the preceding claims wherein R' and R" are the same and are substituted or unsubstituted phenyls.

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4. The method of claim 3 wherein the substituents on the phenyls are the same and are isopropyls in positions 2 and 6.

5. The method of claim 3 wherein the substituents on the phenyls are the same and are methyls in positions 2, 4 and 6.

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6. A supported catalyst component obtainable by the method of any one of claims 1 to 5.

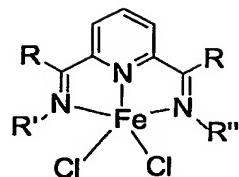
7. A supported catalyst system that comprises the supported catalyst component of claim 6 and an activating agent.

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8. A method for preparing the hollow beads of polyethylene that comprises the steps of:

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a) providing a supported catalyst component wherein the support is a porous functionalised bead of polystyrene and wherein the catalyst component is impregnated on the support and is an iron-based complex of the general formula I



(I)

- 5 b) activating the supported catalyst component with a suitable activating agent;
c) feeding the ethylene monomer;
d) maintaining under polymerisation conditions;
e) retrieving hollow beads of polyethylene of controlled shape and size.

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9. Hollow beads of polyethylene of controlled size and morphology obtainable by the method of claim 8.

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